

ISSN 0147-9725



MARYLAND BIRDLIFE



Bulletin of the Maryland Ornithological Society, Inc.

DECEMBER 1990
VOLUME 46
NUMBER 4

MARYLAND ORNITHOLOGICAL SOCIETY, INC.

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Cover: Royal Tern nest at Barren Island, Dorchester County.

Photo by George L. Armistead on May 28, 1989.



NESTING BIOLOGY OF BARN OWLS FROM EASTERN SHORE MARSHES

Peter R. Bendel and Glenn D. Therres

The Barn Owl's (*Tyto alba*) association with agricultural lands is well known, but they regularly inhabit coastal marshes as well. Coastal marshes are essentially wet grasslands that support healthy populations of small mammals. Consequently, they are ideal foraging and breeding areas for Barn Owls. These marshes are believed to have supported the core of the historic Barn Owl population along the Atlantic Coast (Blodgett 1989). Cavities in trees adjacent to marsh edges serve as natural nest sites. Where natural cavities are limited, nest boxes have been used successfully to encourage Barn Owl nesting (Colvin 1984).

In 1988, we initiated a study designed to develop a nest box suitable for Barn Owl use in marsh ecosystems. Eighty experimental nest boxes of two designs were placed in the marsh ecosystems of Fishing Bay in Dorchester County and in Monie Bay in Somerset and Wicomico counties. These large marshes are dominated by saltmarsh cordgrass (*Spartina alterniflora*), saltmeadow cordgrass (*S. patens*), big cordgrass (*S. cynosuroides*), spikegrass (*Distichlis spicata*), needlerush (*Juncus roemerianus*), and Olney three-square (*Scirpus olneyi*), with scattered ponds, tidal creeks, and rivers distributed throughout.

In conjunction with this research, we documented the nesting biology of Barn Owls from these Eastern Shore marshes. Prior to this effort, information on Barn Owls nesting exclusively in marsh ecosystems in Maryland was not available. Colvin (1984) documented Barn Owl nesting biology in New Jersey saltmarshes during 1980-83. In Maryland, Reese (1972) reported on the nesting biology of Barn Owls in off-shore duck blinds and other structures along the shores of Talbot and southern Queen Anne's Counties and in the Choptank River portion of Dorchester County. Most of the surrounding habitats in Reese's study area were upland agricultural lands interspersed with small pockets of tidal marshes. Klaas *et al.* (1978) found Barn Owls nesting in off-shore duck blinds along the Potomac River in Charles and St. Mary's Counties. These birds were also dependent primarily on upland agricultural areas for hunting.

The results reported here are based on 28 nesting attempts for the period 1988 through 1990. A nesting attempt was defined as at least 1 egg being laid. Table 1 summarizes the nesting data from our nest boxes during this study.

Table 1. Summary of Barn Owl nesting data from nest boxes in Fishing Bay and Monie Bay marsh ecosystems.

	1988	1989	1990	Years Combined
Nest sites available	10	40	40	90
Nesting pairs	3	8	7	18
Nesting attempts	4	12	12	28
Successful attempts	2	4	8	14
Eggs ¹	16	57	40	113
Mean clutch size	4.0	5.2	5.0	4.9
Young	6	21	36	63
Mean brood size	3.0	4.2	4.5	4.2
Young reaching fledging age	4	16	29	49

¹ Number of eggs known laid in 23 of 28 nesting attempts. Clutch sizes in 5 nests were not determined.

NESTING SEASON

Stewart and Robbins (1958) reported that Barn Owls nested throughout the year in Maryland. During the present study, Barn Owls nested in every month except January. Although nest boxes were not checked during February or October, nesting activities occurred within these months based upon our observations during March and November. A single nest with young was found in mid March, so at least 1 clutch of eggs was laid in February. Another nest with young was found in mid November, meaning that the eggs were laid in October. Egg dates from this study ranged from mid February to early November. Maryland egg dates from other sources ranged from 8 March to 20 September (Robbins and Bystrak 1977). Peak egg dates occurred from mid April through May, when 74% of the eggs were in nests. Reese (1972) reported extreme dates of 21 March and 7 September from off-shore nests.

Figure 1 shows the nesting chronology of successful nests. Unsuccessful nesting attempts were not included.

Our nestling dates ranged from 12 March to 12 December, with a peak in June and July. The majority of young (65%) were in their nests during June and/or July. Fledging peaked in July and August. Dates in the Maryland Nest Record Files ranged from 29 March to 24 October for Maryland, with an early record of 14 January in Washington, D.C. Reese (1972) found young in duck blinds from 7 April to 10 October. E. Blom (pers. comm.) found 7 nearly full-grown young in a box near Baltimore on 29 December.

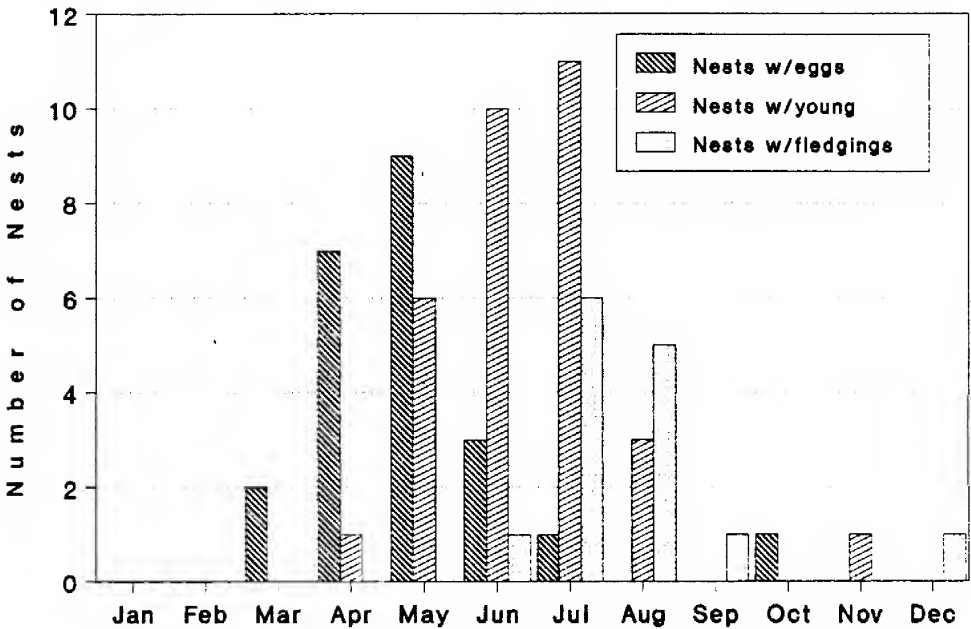


Figure 1. Monthly summary of the 14 Barn Owl nests that successfully raised young during 1988-90 in the Fishing Bay and Monie Bay marshes. Within a given month, the same nest may be counted in 2 categories.

EGGS

Of 23 nests for which the number of complete clutches was recorded, clutch sizes ranged from 1 to 10 with a mean of 4.9. This compares to a mean of 4.8 (range 1-10) statewide (Maryland Nest Record File, $n=153$). Reese (1972) reported a mean of 5.5 eggs per nest for 74 nests during the 6 years of his study. Klaas *et al.* (1978) reported a mean clutch size of 5.0 for 22 nests.

Of the 113 eggs laid, 63 (56%) hatched. In only one nest did all eggs hatch. Reese (1972) reported only 42% of the eggs laid in his study hatched. Klaas *et al.* (1978) reported 39% of the eggs in their study hatched. We found 13 nests (46%) abandoned before any eggs hatched. The mean clutch size of abandoned attempts was 4.2 (range 1-10), compared to a mean of 5.9 (range 3-8) in successful nests. High failure rates have been reported elsewhere (Otteni *et al.* 1972, Smith *et al.* 1974). Causes of nest abandonment were unknown, although some may have resulted from the disturbances associated with monitoring the nests. Although Taylor (1991) suggested that researchers are unlikely to cause abandonment by visiting Barn Owl nests, we tried to minimize disturbance by not returning to a nest for 3-4 weeks after eggs were found. One nest was abandoned after the incubating adult flushed upon our approach and was then attacked by an Osprey (*Pandion haliaetus*).

RENESTING

Eleven renesting attempts by 8 pairs were recorded during the three-year period. We considered all nesting attempts at a nest site in a given year to be by the same pair, although we did not have proof. Most renesting attempts (55%) occurred immediately after the failure of a previous clutch. One pair renested after their initial brood of 5 young died. Another pair successfully raised 2 broods in 1990, raising 5 young each time. Three pairs attempted to nest 3 times in a year, each producing at least 1 successful brood. The mean number of nesting attempts per pair in a given year was 1.6 ($n=18$).

YOUNG

A total of 63 young were hatched from 15 nests. Brood sizes ranged from 2 to 6, with a mean of 4.2 per successful nest. This compares to a statewide range of 1 to 7, with a mean of 3.7 (Maryland Nest Record File, $n=132$). Reese (1972) and Klaas *et al.* (1978) also reported identical means of 4.2 nestlings per successful nest. Colvin (1984) reported a mean of 3.7 young per nest in New Jersey saltmarshes.

Fourteen young (22%) from 4 nests died prior to fledging. Only one entire brood died. Causes for these deaths were unknown. Five nestlings died at a nest site in March 1989 after our boat broke down next to the nest box, resulting in the adults staying away from the young for more than 3 hours. Exposure may have contributed to the death of these nestlings. Heat stress may have caused the deaths of 6 nestlings in two other nests. Reese (1972) reported that 10% of his nestlings died prior to fledging.

We banded 55 young of which 49 left the nest. Six (11%) of our banded young died in their nests, although the deaths were not believed to have resulted from the banding itself; others in the same brood survived. In New Jersey, Colvin (1984) documented 12% to 61% mortality of young between the time they were banded and fledging. He attributed this mortality to fluctuating prey populations.

One Barn Owl banded as a nestling in 1989 was captured the following year 6.25 miles (10 km) from where it fledged. It fledged between July 24 and 26, 1989 and was found incubating 3 eggs on April 10, 1990 in a box in the Fishing Bay marshes.

NESTING SUCCESS

Fifty percent of the nesting attempts in this study were successful in raising at least 1 young. In 14 nests, a total of 49 young reached fledging age, for a mean of 3.5 young per successful nest. Both Reese (1972) and Klaas *et al.* (1978) reported a mean of 3.8 young per successful nest. Colvin (1984) reported a mean of 3.7 young per nest.

Henny (1969) estimated that to maintain a stable population, 44% to 53% of the Barn Owl population must breed successfully and 1.86-2.18 young per breeding-aged female must be produced each year. Because we found a 50% success rate and 2.7 young per nesting female ($n=18$), it seems that the Barn Owl populations in these marshes were stable. This is based on the following assumptions: (1) Henny's estimates are correct,

(2) all females of breeding age actually bred, and (3) the data from our study are representative of Eastern Shore marsh populations.

In summary, Barn Owls nesting in Eastern Shore marshes exhibit similar nesting biology to Barn Owls nesting elsewhere in Maryland. Clutch sizes and brood sizes were comparable. Nesting can occur throughout the year, although the peak is from April through July. The population of marsh-nesting Barn Owls appears to be stable.

ACKNOWLEDGMENTS

This study was made possible with the assistance of DNR's Watermens Compensation Program, which provided materials and man power to construct and erect nest boxes. Additional financial support was provided by contributions to the Chesapeake Bay and Endangered Species Fund. W. Bendel, D. Brinker, B. Eby, W. Gates, W. Henry, R. Hill, W. Perry, and S. Smith assisted with data collection. S. A. Smith and D. F. Brinker reviewed the manuscript and provided helpful comments.

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BREEDING SEASON, June 1 - July 31, 1990

ROBERT F. RINGLER

The features of this season were hot weather with average precipitation overall, night marsh survey conducted by the Maryland Department of Natural Resources, and a new breeding bird for the state. Shorebirding was spectacular at Hart-Miller as usual, and a new location for shorebirds was provided when water levels at the Easton Sewage Lagoons were lowered, producing an exceptional mudflat.

Abbreviations: DC—District of Columbia, NWR—National Wildlife Refuge, PRNAS—Patuxent River Naval Air Station, SP—State Park, WMA—Wildlife Management Area.

Locations (county in parentheses): Black Marsh (Baltimore), Blackwater NWR (Dorchester), Bloodsworth Island (Dorchester), Carroll Island (Baltimore), Centennial Lake and Park (Howard), Courthouse Point WMA (Cecil), Day's Cove (Baltimore), Deep Creek Lake (Garrett), Eastern Neck NWR (Kent), Hart-Miller (Baltimore), Hughes Hollow (Montgomery), King's Creek (Talbot), Loch Raven (Baltimore), PRNAS (St. Mary's), Piney Run Park (Carroll), Poplar Island (Talbot), Rocky Gap SP (Allegany), Violet's Lock (Montgomery). Locations not listed here can be found in the index of the Maryland State Highway Map.

Observations—George & Henry Armistead, Rick Blom, Connie Bocksti, Larry Bonham, Bob & Jim Boxwell, Martha Chestem, Dave Czaplak, Lynn Davidson, Les Eastman, Jeff Effinger, Ethel Engle, Jane Farrell, Jerry & Roberta Fletcher, Jim & Patricia Gruber, Robert Hilton, Marshall Iliff, Ray Kiddy, Doug Lister, Nancy Magnusson, Don Meritt, Mariana Nuttle, Michael & Paul O'Brien, Bonnie Ott, Paul Pisano, Fran Pope, Kyle Rambo, Jan Reese, Steve Sanford, Gene Scarpulla, Steve Simon, Teresa Simons, David Smith, Jo Solem, Jim Stasz, Charles Swift, Mary Twigg, Dave Walbeck, Robert Warfield, Pete Webb, Joy Wheeler, Steve Whitcomb, Hal Wierenga, Jim Wilkinson.

Loons, Grebes, Pelicans. **Common Loons** that are best described as straggling migrants were 1 at Rocky Gap on June 2-3 (Simons), 1 in basic plumage flying north over the Severn River on June 10 (M. O'Brien) and 1 in non-breeding plumage on Centennial Lake through June 13 (Bockstie). Other summering Common Loons were 1 in DC on June 23-30 (Richard Wiesler, Len Swinehart), 2 at Swan Point on July 22 (Grubers), and 1 at Loch Raven on July 23-24 (Scarpulla, Wheeler). A **Pied-billed Grebe** on Loch Raven on July 3-4 (Wheeler) showed no sign of nesting, while only 6 were seen at this species' stronghold of Deal Island WMA on July 19 (M. O'Brien). A summering **Horned Grebe** in breeding plumage was at North Beach on June 21-30 (Stasz). The most **Brown Pelicans** seen on one day at Ocean City this summer was 33 on June 25 (M. O'Brien).

Cormorants. The big news this summer was the discovery by Don Meritt of **Double-crested Cormorants** nesting on Poplar Island. They apparently occupied used egret nests in the taller trees on the island. On July 20 birds were sitting on 55 nests and about 200 cormorants were present around the island. There were plenty of other cormorants in the state during the season with 10 at PRNAS on June 2 (Rambo +), 2 at Hog Island Wharf, Caroline County on June 3 (Engle), 27 at Tilghman Island on June 5 (Reese), 2

at Rock Hall on June 9 (Reese), 6 at Miles River Neck on June 21 (Effinger), 1 adult flying southwest over Tanyard on June 22 (M. O'Brien), 280 at Bloodsworth Island on June 29 (Armisteads), 1 at Chestertown on July 4 (Grubers), 2 near Bellevue on July 7 (Armisteads), 5 at Back River on July 7 (Simon), 1 at Seneca on July 9 (M. O'Brien), 3 in DC on July 11 (Czaplak) and at least 25 there on July 22 (Hilton), and 2 at Choptank on July 12 (Engle). The large number of Cormorants at Bloodsworth may signal a future nesting location for them in Maryland.

Heron, Ibis. An **American Bittern** at Hughes Hollow on July 22 (Hilton) was unusual in the Piedmont in summer. The only **Least Bittern** reports were of 3 at King's Creek on June 2 (Reese) and an adult with an immature at Lilypons on July 21 (Davidson). Inland **Great Blue Herons** were 3 at North Branch on June 1 (Simons), 7 at Loch Raven on July 4 (Simon), and 11 near Brown's Bridge, Howard County on July 6 (Chestem). Swift saw a pair of Great Blues attending a nest with 3 young on Nassawango Creek on May 29. This is one of very few non-colonial nests that has been found in the state. The Armisteads counted 138 Great Blue Heron nests on Bloodsworth Island on June 29. Post-breeding dispersal of **Great Egrets** brought 1 to Courthouse Point on July 15 (Blom), 10 to Lilypons on July 21 (Davidson), 1 near Ellicott City on July 26 (Ott) and 1 to Piney Run on July 30 (Ringler). Wandering **Snowy Egrets** were 1 at North Beach on June 2 (Stasz, Ringler), 38 at Tilghman Island on June 5 (Reese), 1 in South Baltimore on June 13 (Wilkinson), 4 on Kent Island on June 21 (Grubers) and 1 at Courthouse Point on July 15 (Blom). The first post-breeding **Little Blue Herons** in the Piedmont were 1 at Seneca on July 8 (John Michaelides) and an immature at Centennial Park on July 14 (Magnusson, Bockstie), while 6 were at Courthouse Point on July 15 and 10 there on the 28th (Blom). The meanderings of **Cattle Egrets** included 1 at Courthouse Point on May 31 (Blom), 18 at Queen Anne on June 5 (Grubers), 4 near Price on June 9 (Ringler +), 1 at Edgewood on July 13 (Eastman), 1 at Centennial Park on July 14 and July 30 (Farrell +), 65 at Elkton on July 26 (Reese), and 1 at Annapolis on July 28 (Iliff). The Armisteads found a **Green-backed Heron** nest with 1 large young in it near Bellevue on July 8. Displaced **Black-crowned Night-Herons** were 2 at Lake Roland on June 16 (Walbeck) and an immature at Chestertown on July 4 (Grubers). An immature **Yellow-crowned Night-Heron** was seen at Chesapeake Beach and North Beach on July 14 (Stasz). **Glossy Ibis** away from breeding areas were 3 at Courthouse Point on July 15 and 5 there on July 28 (Blom), 9 at Rock Hall on July 17 (Grubers), 3 at Easton on July 17 (M. O'Brien), and 4 there on July 26 (Effinger).

Waterfowl. Among the summering flocks of waterfowl this year were 47 **Mute Swans** at Eastern Neck on July 16 (Grubers), 285 **Canada Geese** at Blackwater on June 9 (H. Armistead) and 50 Canadas at Tanyard on July 23-31 (Engle). The only exotic of the season was a **Ruddy Shelduck** at Courthouse Point on July 29 (Wierenga +). Kiddy counted 11 adult and 68 young **Wood Ducks** at north Branch on July 4. Early fall migrant **Green-winged Teal** were 2 at Easton on July 16 (Effinger) and 1 at Hart-Miller on July 28 (Ringler +), but at Courthouse Point on July 15 Blom discovered a pair of adults with 2 juveniles, the second breeding record for the state. Curt Vacek saw an **American Black Duck** with 6 young at PRNAS on May 21 and the Armisteads found 12 Black Ducks at Bloodsworth Island on June 29. The high inland count of **Mallards** was 75 at Westminster Reservoir on June 30 (Ringler), and the huge breeding flock at Hart-Miller had swelled to 800 on July 28 with the addition of hundreds of young (Ringler +). The Armisteads saw a hen **Gadwall** with 8 downy young at Bloodsworth Island on June 29

with a Laughing Gull trying to catch the young. Summering non-breeding diving ducks were numerous and widespread this year with a drake **Canvasback** on Colgate Creek, Dundalk on June 15 (Wilkinson) and a drake at Hart-Miller on July 28 (Ringler +); a drake **Ring-necked Duck** on the C&O Canal in Montgomery County on June 2 (Czaplak), 1 at North Branch on June 5 (Twigg) and another at PRNAS on July 15 (Lister); a drake **Greater Scaup** at North Branch on June 10 through July 17 (Simons +), 4 drake **Lesser Scaups** on the Patuxent River off Patterson Park on June 3 (Sanford +), a drake on the Patuxent near Solomons on June 12 (Lister), 1 at Edgewood on July 3 (Eastman), and a drake at Hart-Miller on July 28 (Ringler +); a **Black Scoter** on the Choptank River west of Cambridge on June 21 with 2 **Surf Scoters** and 2 **White-winged Scoters** (Reese), and a pair of Black Scoters at Poplar Island on July 20 (Meritt, Ringler), a Surf Scoter at Bloodsworth Island on June 29 (Armisteads), a drake at Poplar Island on July 20 (Meritt, Ringler) and another Surf near Bellevue on July 29 (Armisteads); a pair of **Common Mergansers** near Roosevelt Island, DC on July 7 (Gerald Moylan), a female **Red-breasted Merganser** at Loch Raven on June 11 (Wheeler) and a drake at Poplar Island on July 20 (Meritt, Ringler); and these **Ruddy Ducks**: a drake at Easton on June 4-18 (M. O'Brien, Effinger), a breeding plumage drake on Boyd's Pond, Bayside Beach, Anne Arundel County on June 7 (Shirley Geddes), and 1 in breeding plumage at Chestertown on June 24 (Grubers). The pair of **Hooded Mergansers** at Hughes Hollow on June 3 (Czaplak) may have been breeding.

Diurnal Raptors. Engle's high counts at the Tanyard roost were 40 **Black Vultures** and 175 **Turkey Vultures** on July 15. In the center of the **Osprey's** breeding area Reese found 55 birds at Tilghman Island on June 5, and the Armisteads counted 38 nests on Bloodsworth Island on June 29. Inland Osprey sightings have increased dramatically in recent years, particularly in Garrett and Allegany counties after a nest was found in West Virginia across the Potomac River from Cumberland. Garrett County sightings this year were 2 at Broadford Reservoir from June 11 to July 10 and 2 at Deep Creek Lake on July 27 (Pope). In Allegany County on Osprey was seen at North Branch on June 29 (Twigg). It is quite likely that Ospreys will nest in this part of Maryland soon. Piedmont Ospreys in Baltimore County were 1 at Loch Raven on July 6 (Simon), 2 there on the 9th (Scarpulla), and 1 at Liberty Reservoir on July 10 (Scarpulla). The only inland **Bald Eagle** report was an adult at Savage Park, Howard County on July 15 (Sue Miller). There were 115 active Bald Eagle nests in the state this year with 92 of them successful, producing 164 young (*fide* Glenn Therres). Smith observed a male **Northern Harrier** delivering prey to a female in a marsh near Jenkins Creek, Somerset County on June 6. Harriers are rare breeders away from marshes on the lower Eastern Shore, but sightings this summer indicate they may be nesting in eastern Kent County as a female was seen near Massey on June 10 (Ringler +), 1 near Galena on June 19 (Grubers), and a female near Sassafra on July 29 (Rambo). In Caroline County a harrier was at Choptank on June 17 (Engle) and 1 at Denton on June 19 (R. Fletcher). Widespread, though rarely seen in summer, single **Cooper's Hawks** were in Howard County on the Patapsco River west of Marriottsville on June 16 (Farrell, Solem) and an immature near Ridgely on July 11 (Reese, Wilbur Rittenhouse). A female **Peregrine Falcon** was unexpected at West Potomac Park, DC on July 26 (Gary Nelson). Production at 7 Maryland peregrine nests was 23 eggs with 17 young fledged (*fide* Glenn Therres).

Grouse. An adult **Ruffed Grouse** with downy young on Green Ridge on June 16 (Czaplak) was the only report this summer.

Rails. DNR commenced a comprehensive study of marsh birds in the Coastal Plain this summer. It was conducted by Dave Brinker, Hal Wierenga, Michael O'Brien, and Rick Blom. Among the birds found were 88 **Black Rails** at 42 sites, 28 **King Rails** at 5 Upper Choptank River sites and 24 **Soras** at 13 sites. Other Black Rails of note were 1 seen and heard at 2 P.M. at King's Creek on June 2 (Reese +) and an adult with 2 downy young at Eastern Neck on June 4 (Bob Lamoy). The Armisteads found 4 **Clapper Rails** at Bloodworth Island and 4 others at Adam Island on June 29. King Rails entertained Howard County observers as 1 was at Schooley Mill Park from June 15 through July 14 (Jon K. Boone +) and another at Centennial Lake on July 3-18 (Jon E. Boone +). Another King Rail was at Easton on July 11 and July 22 (Effinger, Scarpulla). Other Soras were 1 at Deal Island WMA on June 6 and July 19 (M. O'Brien) and 1 heard at Finzel Swamp on June 12 (Boxwells). A half-grown **Common Moorhen** was at Tanyard on July 8 (Engle), 5 adults with 2 juveniles at Courthouse Point on July 15 (Blom) and an adult with 3 young was at Hughes Hollow on July 22 (Hilton). Late departing **American Coots** were 1 at Hughes Hollow on June 2 (Webb, Sanford), 1 at Centennial Lake on June 5 (Farrell), and 3 at Deal Island WMA on June 6 (M. O'Brien).

Plovers, Oystercatcher, Stilts. The last spring migrant **Semipalmated Plovers** were 2 at North Branch on June 10 (Simons), and the first fall migrants were 3 at Fairlee on July 2 (Grubers). On July 28 25 were at Hart-Miller (Ringler +) and 1 at Courthouse Point (Blom). Reese found a **Killdeer** incubating 4 eggs at Trappe on June 25. Flocks of Killdeer were already gathering by that time with 46 at North Branch on June 18 (Simons), 80 at Cambridge on July 24 (M. O'Brien), 51 at Easton on July 24 (Effinger), and 73 at Green Manor Turf Farm, Howard County on July 29 (Magnusson, Farrell). An **American Oystercatcher** on the Choptank River west of Cambridge on June 21 (Reese) was at an unusual location. Only 3 **Black-necked Stilts** were seen at Deal Island WMA on July 19 (M. O'Brien).

Sandpipers. Though a **Greater Yellowlegs** at Courthouse Point on May 31 (Blom), at Denton on June 6 (Fletchers) and 3 at Blackwater on June 9 (H. Armistead) may be classed as late spring birds, the 1 at North Branch on June 13-16 (Twigg +) is between the typical migration periods for this species, and the 1 at North Beach on June 30 (Stasz) is a fall bird. The first buildup of fall migrant Greater Yellowlegs was 28 at Easton on July 26 (Effinger). The first fall migrant **Lesser Yellowlegs** was at Fairlee on June 26 (Grubers), quickly followed by 2 at Easton on July 2 and 73 there on July 26 (Effinger); other high counts were 52 at Cambridge on July 24 (M. O'Brien) and 400 at Hart-Miller on July 28 (Ringler +). An early **Solitary Sandpiper** was at North Branch on July 6 (Twigg) and Effinger counted 11 **Spotted Sandpipers** at Easton on July 24. The first southbound **Willetts** were noted by Warfield with flocks of 20 and 9 flying over Cape Isle of Wight near Ocean City on June 20. Davidson found 4 **Upland Sandpipers** remaining in the species' breeding area near Gortner on July 3 while migrants were 2 near Buckeystown on July 5 (Rick Calvert) increasing to 13 on July 21 (Davidson) and 20 on July 26 (Willem Maane). The first fall migrant **Whimbrel** seen was at West Ocean City on July 6 (Warfield). The first migrant **Ruddy Turnstone** reported was at Hart-Miller on July 28 (Ringler +).

Fall migrant **Sanderlings** were 1 at North Branch on July 15 (Simons, Twigg), 1 at Easton on July 24 (Effinger) and 7 at Hart-Miller on July 28 (Ringler +). The 1 **Semipalmated Sandpiper** at North Branch on June 18 (Simons) was probably a spring

migrant, but the 2 at Remington Farms on July 2 (Grubers) were fall birds. The 2 **Western Sandpipers** at Easton on July 11 (M. O'Brien) were fall migrants as were the 100 at Hart-Miller on July 28 (Ringler +) and 30 at Courthouse Point the same day, the latter flock with 10 Semipalmated Sandpipers and 30 **Least Sandpipers** (Blom). Exceptionally late for the spring were a Least Sandpiper at Courthouse Point on May 31 (Blom), 1 at North Branch on June 1 (Simons) and 3 at Remington Farms on June 8 (Reese); fall migrants began with 8 at Fairlee on July 1 and 54 there on July 24 (Grubers), 1 at Easton on July 2 and 150 there on July 17 (Effinger), and 18 at North Branch on July 13 (Twigg). An exceptionally early **White-rumped Sandpiper** was at North Beach on July 23 (Stasz). Highs for **Pectoral Sandpipers** were 75 at Easton on July 26 (Effinger) and 100 at Hart-Miller on July 28 (Ringler +). A breeding plumage **Dunlin** at Easton on July 9-11 (Effinger, M. O'Brien) is best marked as a summer vagrant since this species' fall migration does not reach here until mid September. **Stilt Sandpipers** made a good showing with 4 at Easton on July 9 and 9 there on July 24 (Effinger), 1 at Blackwater on July 16 (Pisano), 26 at Cambridge on July 24 (M. O'Brien), 1 at Fairlee on July 24 (Grubers) and 16 at Hart-Miller on July 28 (Ringler +). The first **Short-billed Dowitcher** of the fall migration was at Fairlee on June 26; 6 were there on July 24 (Grubers), followed by 3 at South Holland Island on June 29 (Armisteads), 1 at Easton on July 2 and 31 there on July 24 (Effinger), 1 at North Branch on July 11 (Twigg), 5 at Poplar Island on July 20 (Meritt, Ringler), and 50 at Hart-Miller on July 28 (Ringler +). The only **Wilson's Phalarope** of the season was also at Hart-Miller on July 28 (Ringler +).

Jaegers. The most surprising event of the season was the appearance of **Pomarine Jaegers** at two inland locations, unprecedented in Maryland. The first was on the Potomac River at Seneca on July 8-9 (P. O'Brien +) and the second was at Deep Creek Lake on July 24-27 (Pope +). It will be interesting to learn if other states reported jaegers inland at this time and if there is an explanation for this unusual occurrence.

Gulls. The first evidence of the dispersal of **Laughing Gulls** was the observation of 4 juveniles on the Upper Miles River on July 12 (Effinger), and inland, 8 at Brighton Dam on July 29 (Magnusson, Farrell) and an adult in DC on July 30 (Czaplak). A **Bonaparte's Gull** at Hart-Miller on July 28 (Ringler +) is a non-breeding summer vagrant. A **Ring-billed Gull** at Rocky Gap on June 3 (Simons) is a spring straggler. The first fall migrant Ring-bills were 3 adults in DC on July 11 (Czaplak), 1 at North Branch on July 13 (Simons), 9 adults on the Upper Miles River on July 13 (Effinger), and 5 at Deep Creek Lake on July 25 (Pope). There were 90 Ring-bills at Carroll Island on July 19 (Blom). The first juvenile Ring-bills seen were at North Beach on July 22 (Stasz) and in DC on July 31 (Czaplak). The Armisteads found 504 **Herring Gulls** at Bloodsworth Island on June 29. At Deep Creek Lake a Herring Gull was seen on July 27-29 (Pope, Kiddy). A **Lesser Black-backed Gull** in first summer plumage was at Sandy Point on July 15 (Wierenga).

Terns, Skimmers. At North Beach, Stasz noted 2 summering **Caspian Terns** on June 15 and single birds on June 30 and July 7, and 1 at Deep Creek Lake on July 25-27 (Pope) would be a migrant. At Hart-Miller, the summering stronghold for Caspian Terns in Maryland, there were 200 birds on July 28 (Ringler +). Wandering **Royal Terns** were 2 at PRNAS on June 2 (Rambo +), 1 at Tilghman Island on June 5 (Reese) and 4 at Oak Creek, Talbot County on June 18 (Effinger). Stasz noted the first juvenile Royal Tern at North Beach on July 22. Interesting sightings of **Common Terns** were an adult on the Potomac River off Turkey Run Park on June 20 (Pisano), 150 on the Choptank River west

of Cambridge on June 21 (Reese), 12 at Swan Creek, Kent County on July 24 (Grubers), and 100, including flightless juveniles, at Hart-Miller on July 28 (Ringler +). This is the first time that Common Terns have been successful at this nesting site far north in the Bay. Inland **Forster's Terns** were all singles, at North Branch on July 13 (Simons, Twigg), at Violet's Lock on July 16 and July 31 (Bonham), and at Loch Raven on July 27 (Simon). Post-breeding dispersal in the Bay brought 400 to Swan Creek on July 24 (Grubers) and 850 to Hart-Miller on July 28 (Ringler +). Rambo found a **Least Tern** nest with eggs at PRNAS on May 25. In Caroline County, Engle saw 2 adult Least Terns at Hog Island Wharf on June 12 and 3 on July 17, and 2 adults feeding an immature at Choptank on June 17. It is not known where these birds nest. In Baltimore, Wilkinson saw a pair of Least Terns on Colgate Creek in Dundalk. The first migrant **Black Terns** were 2 adults in breeding plumage at Lilypons on July 4 (Whitcomb), 1 at Easton on July 26 (Effinger) and 1 at Violet's Lock on July 31 (Bonham). Single **Black Skimmers** at unusual locations were at Jenkins Creek, Somerset County on June 6 (Smith), and PRNAS on July 7 (Mike Bryan), and 8 adults were seen at North Beach on June 13 (Stasz).

Doves, Parakeets. The 2 **Rock Doves** that the Armisteads found on Adam Island on June 29 were far from any known nest site. Mike Donovan saw a **Monk Parakeet** at Colmar Manor in Prince George's County on July 27. Though sightings of this species persist, they are not known to nest in the state.

Owls, Goatsuckers, Woodpeckers. A **Barn Owl** nest with 4 large young was near Choptank on June 21 (Reese) and 1 or 2 Barn Owls were found near The Glades in Garrett County from June 1 through July 1 (Pope). A **Chuck-will's-widow** was heard throughout the period at Soldier's Delight in western Baltimore County (Walbeck). Effinger saw 2 **Red-headed Woodpeckers** on June 7 visiting a nest hole at Rich Neck Manor, Talbot County, where the species is a rare breeder. An adult Red-headed was feeding a fledgling at Martingham, also in Talbot County on Aug. 2 (Ringler). A **Northern Flicker** nest with 3 young was at Pleasant Valley, Carroll County on June 26 (Ringler, Jerry Newton).

Flycatchers, Swallows. The Grubers had the unusual distinction of banding **Yellow-bellied Flycatchers** in both months this season at Tolchester. They caught a record late spring migrant on June 9 and an early fall bird on July 31. Czaplak found an **Alder Flycatcher** singing at Blair's Valley, Washington County on June 2. This was probably a late migrant as the species is not known to nest there. Rare on the Coastal Plain, at least 2 **Willow Flycatchers** were singing at PRNAS on June 2 (Rambo +). These may also have been late spring migrants. However, 1 calling on Hall Creek, Calvert County on June 30 (Stasz), was likely a breeder. Engle found 2 adult **Tree Swallows** feeding 6 young at Tanyard on June 3. Effinger saw the first large migrant flock of Tree Swallows with 200 at Easton on July 24. Flocks of **Bank Swallows** included 200 at Fairlee Creek on July 14 (Grubers) and 75 at Ruthsburg on July 15 (H. Armistead). Effinger estimated 250 **Barn Swallows** at Easton on July 11.

Ravens, Chickadees, Nuthatches. A **Common Raven** at Lilypons on July 22 (Ed Bruce) had probably wandered from a nearby nesting area such as Sugarloaf Mountain. Another **Carolina Chickadee** with the measurements of a Black-capped Chickadee was banded at Tolchester on July 30 (Jared Parks). Mariana Nuttle made the remarkable

find of a **Red-breasted Nuthatch** at Denton on July 5 and July 16 along with a single **Brown-headed Nuthatch** on July 12 and July 16. Effinger saw 2 **White-breasted Nuthatches** on June 1 at Trappe where they are rare.

Wrens, Robins. Michael O'Brien heard 2 **Sedge Wrens** singing at 12:45 A.M. at Deal Island WMA on July 20 and Blom counted 30 **Marsh Wrens** at Carroll Island on July 19. A flock of 52 **American Robins** had gathered for migration at Remington Farms on July 18 (Grubers).

Waxwings, Shrikes, Vireos. Reese observed a **Cedar Waxwing** on a nest at St. Paul's Church, Kent County on June 9, and Alice Jones saw an adult with 1 young at Blackwater on July 7. Both sites are rare breeding areas for waxwings. An adult and 2 immature **Loggerhead Shrikes** were at Antietam Battlefield on July 14 (Davidson +). Czaplak found a **Solitary Vireo** singing on June 16 on Green Ridge, one of the few sites off the Allegheny Plateau where this species breeds in the state.

Warblers, Tanager. **Blue-winged Warblers** at unusual locations were 1 at Federalsburg on June 8 (Inez Glime) and 1 singing at Cranesville Swamp on June 11 (Boxwells). Kiddy saw a **Golden-winged Warbler** with 1 young on June 10 at Cumberland. The Armisteads noted the first fall migrant **Yellow Warbler** near Bellevue on July 29. The **Black-and-white Warbler** that Effinger found at Trappe on June 1 may have been a rare local breeder there. An **American Redstart** at St. Michaels on July 6 (Reese) may have been an extraordinarily early fall migrant. Bob Fletcher saw a **Prothonotary Warbler** feeding young on a porch beam at Camp Mardela in Caroline County on June 29. L. T. Short saw a **Summer Tanager** feeding young in a nest at Denton on June 23.

Dickcissels, Sparrows. Reports of **Dickcissels** this summer were 1 near Blackwater on June 1 (M. O'Brien), a singing male near Keysville on June 3-16 (Ringler), at least 2 singing males near Massey on June 10 (Ringler +), and 3 about 5 miles east of Denton on June 30 (Reese +) and 1 at Ruthsburg on June 13 (Grubers). A **Savannah Sparrow** was near Keysville on June 16 (Ringler) in an area where that species has been known to breed. Reports of **Henslow's Sparrows** came from Garrett County with 1 near Carey Run on June 12 (Boxwells) and 2 or 3 singing near Gortner on July 3 (Davidson). A **Seaside Sparrow** at Horsehead Sanctuary on June 14 (M. O'Brien) was near that species' Eastern Shore limit. Reese found a **Swamp Sparrow** on June 2 at Kingston Bridge where it also may be a rare breeder. A **White-throated Sparrow** at Beltsville on July 11 (Bob Caswell) is a non-breeding vagrant. So is the **Dark-eyed Junco** at Chevy Chase Country Club on June 28 (Sheila Cochran).

Icterines, Siskin. The first confirmed breeding of **Bobolinks** in Carroll County occurred this summer at Keysville where a male was singing on June 3 and 2 males with a female carrying food and a fecal sac were seen on June 16 (Ringler). Fall migrant Bobolinks were 2 at Upper Choptank River, Talbot County on July 11 (M. O'Brien), and a male near Patapsco, Carroll County on July 27 (Elmer & Jean Worthley). A partial albino **Red-winged Blackbird** was seen at Dorsey Hall, Howard County on June 24 (Solem, Farrell, Magnusson). A fledgling **Brown-headed Cowbird** was being fed by a Yellow-billed Cuckoo at St. Michaels on July 21 (Reese). Fran Pope was surprised by a **Pine Siskin** that appeared at her feeder in Mountain Lake Park on June 17.

Addenda. Additional data for spring 1991 from Rick Blom are as follows: at Black Marsh—3 King and 8 Virginia Rails on April 20, 5 Chuck-will's-widows on April 25, and 1 Boat-tailed Grackle on May 24; at Carroll Island—1 Great Egret and 1 Merlin on April 14, 2 Royal Terns and 1 migrant Vesper Sparrow on April 20, 1 Sora and 1 Sedge Wren on April 25, 1 Black Rail and 2 migrant Savannah Sparrows on May 17, and 25 American Woodcock on May 25; at Day's Cove—a pair of Canada Geese with 2 young on April 20; at Courthouse Point—3 Great Egrets, 2 Snowy Egrets, 30 Green-winged Teal, 12 Northern Pintail, 1 Sora and 1000 Tree Swallows on April 22, and 1 Great Egret and 3 Lesser Yellowlegs on May 31; at Eastern Neck—1 Red-throated Loon, 55 Horned Grebes and 500 Buffleheads on April 22; and near Worton—1 Upland Sandpiper and 600 Ring-billed Gulls (including no adults) on April 22.

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BOOK REVIEW

BEAKLESS BLUEBIRDS & FEATHERLESS PENGUINS. Observations of a Naturalist. Sister Barbara Ann. Foreword by Dr. Lawrence Zeleny. 1990 Scriptorium Publications, P.O. Box 3127, Catonsville, Maryland 21228. Black-and-white sketches by the author, black-and-white photographs, one map, 274 pp. \$10.

Sister Barbara Ann's story is well known to us in the Baltimore Bird Club. We've been visiting her bluebird trail for many years and have admired her dedication to the birds at her place of residence, the All Saints Episcopal Convent in Catonsville. When she called me soon after the major crisis to her bluebirds had occurred, I knew exactly where the bluebird house stood where the House Sparrows had done their worst. Though the situation had been touch and go for a while, by the time she called she could report that the surviving bluebirds were doing nicely and responding to the ministrations of the sisters. It was requirements of permits and flight cages that were putting pressure on the determination of the sisters to follow through. As then president of BBC I could only give her encouragement to suffer the bureaucratic demands, for we as a club did not hold permits or a flight cage for live birds. (We no have a permit to hold dead birds and have them mounted for public display).

At the time of Sister Barbara Ann's phone call I discreetly refrained from sharing my personal feeling about her project. *Bluebirds without beaks!* I'll have to admit that my reaction to finding the severely injured birds would have been that death is often a necessary step in the continuum of life. Yet these women had not accepted that as an option and were able to save the birds. In the years since the genesis of their *Sialia* salvation story, they can reflect on the presence of our creator's steadfast love for us all. The return we can offer is our own steadfast love for all other creations of our creator. BB&FP may be a perfect statement of that philosophy.

While the bluebird rescue part of the story is very readable in itself, Sister Barbara Ann added many interesting natural history notes and musings from her life at the convent and from her travels. She is a careful observer and effectively weaves small incidents together in a pleasing narrative style. Her sketches add much interest to many pages. The frontispiece by Sister Frances Katherine orients the uninitiated to the part played by the "featherless penguins."

We rejoice in the acclaim that Sister Barbara Ann has received for her well-told story. Once again the study of birds has inspired an MOS member to write a book that shares the joy of the special dimension that birds bring to our lives.—Joy G. Wheeler

MARYLAND BIRDLIFE

Published Quarterly by the Maryland Ornithological Society, Inc. to Record and Encourage the Study of Birds in Maryland.

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Maryland Ornithological Society, Inc.



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